

Sequence Listing.ST25
SEQUENCE LISTING

<110> Ptacek, Louis J.
Fu, Ying-Hui
Jones, Christopher R.

<120> Casein Kinase I Delta and Casein Kinase I Epsilon and Sleep in Humans

<130> 1321.2.82p

<160> 12

<170> PatentIn version 3.2

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          35          40          45

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          50          55          60

Ile Pro Thr Ile Arg Trp Cys Gly Ala Glu Gly Asp Tyr Asn Val Met
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Val Met Glu Leu Leu Gly Pro Ser Leu Glu Asp Leu Phe Asn Phe Cys
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 Val Tyr Ile Ile Asp Phe Gly Leu Ala Lys Lys Tyr Arg Asp Ala Arg
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 Thr His Gln His Ile Pro Tyr Arg Glu Asn Lys Asn Leu Thr Gly Thr
 165 170 175
 Ala Arg Tyr Ala Ser Ile Asn Thr His Leu Gly Ile Glu Gln Ser Arg
 180 185 190
 Arg Asp Asp Leu Glu Ser Leu Gly Tyr Val Leu Met Tyr Phe Asn Leu
 195 200 205
 Gly Ser Leu Pro Trp Gln Gly Leu Lys Ala Ala Thr Lys Arg Gln Lys
 210 215 220
 Tyr Glu Arg Ile Ser Glu Lys Lys Met Ser Thr Pro Ile Glu Val Leu
 225 230 235 240
 Cys Lys Gly Tyr Pro Ser Glu Phe Ala Thr Tyr Leu Asn Phe Cys Arg
 245 250 255
 Ser Leu Arg Phe Asp Asp Lys Pro Asp Tyr Ser Tyr Leu Arg Gln Leu
 260 265 270
 Phe Arg Asn Leu Phe His Arg Gln Gly Phe Ser Tyr Asp Tyr Val Phe
 275 280 285
 Asp Trp Asn Met Leu Lys Phe Gly Ala Ser Arg Ala Ala Asp Asp Ala
 290 295 300
 Glu Arg Glu Arg Arg Asp Arg Glu Glu Arg Leu Arg His Ser Arg Asn
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 Pro Ala Thr Arg Gly Leu Pro Ser Thr Ala Ser Gly Arg Leu Arg Gly
 325 330 335
 Thr Gln Glu Val Ala Pro Pro Thr Pro Leu Thr Pro Thr Ser His Thr
 340 345 350
 Ala Asn Thr Ser Pro Arg Pro Val Ser Gly Met Glu Arg Glu Arg Lys
 355 360 365
 Val Ser Met Arg Leu His Arg Gly Ala Pro Val Asn Ile Ser Ser Ser
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Leu His Ile Glu Ser Lys Ile Tyr Lys Met Met Gln Gly Gly Val Gly
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Ile Pro Thr Ile Arg Trp Cys Gly Ala Glu Gly Asp Tyr Asn Val Met
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Val Met Glu Leu Leu Gly Pro Ser Leu Glu Asp Leu Phe Asn Phe Cys
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Ser Arg Lys Phe Ser Leu Lys Thr Val Leu Leu Leu Ala Asp Gln Met
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Ile Ser Arg Ile Glu Tyr Ile His Ser Lys Asn Phe Ile His Arg Asp
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Val Lys Pro Asp Asn Phe Leu Met Gly Leu Gly Lys Lys Gly Asn Leu
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Val Tyr Ile Ile Asp Phe Gly Leu Ala Lys Lys Tyr Arg Asp Ala Arg
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Thr His Gln His Ile Pro Tyr Arg Glu Asn Lys Asn Leu Thr Gly Thr
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Ala Arg Tyr Ala Ser Ile Asn Thr His Leu Gly Ile Glu Gln Ser Arg
180 185 190

Arg Asp Asp Leu Glu Ser Leu Gly Tyr Val Leu Met Tyr Phe Asn Leu
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 275 280 285

Asp Trp Asn Met Leu Lys Phe Gly Ala Ser Arg Ala Ala Asp Asp Ala
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Glu Arg Glu Arg Arg Asp Arg Glu Glu Arg Leu Arg His Ser Arg Asn
 305 310 315 320

Pro Ala Thr Arg Gly Leu Pro Ser Thr Ala Ser Gly Arg Leu Arg Gly
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Sequence Listing.ST25

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 35 40 45

Leu His Ile Glu Ser Lys Ile Tyr Lys Met Met Gln Gly Gly Val Gly
 50 55 60

Ile Pro Thr Ile Arg Trp Cys Gly Ala Glu Gly Asp Tyr Asn Val Met
 65 70 75 80

Val Met Glu Leu Leu Gly Pro Ser Leu Glu Asp Leu Phe Asn Phe Cys
 85 90 95

Ser Arg Lys Phe Ser Leu Lys Thr Val Leu Leu Leu Ala Asp Gln Met
 100 105 110

Ile Ser Arg Ile Glu Tyr Ile His Ser Lys Asn Phe Ile His Arg Asp
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Val Lys Pro Asp Asn Phe Leu Met Gly Leu Gly Lys Lys Gly Asn Leu
 130 135 140

Val Tyr Ile Ile Asp Phe Gly Leu Ala Lys Lys Tyr Arg Asp Ala Arg
 145 150 155 160

Thr His Gln His Ile Pro Tyr Arg Glu Asn Lys Asn Leu Thr Gly Thr
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Ala Arg Tyr Ala Ser Ile Asn Thr His Leu Gly Ile Glu Gln Ser Arg
 180 185 190

Arg Asp Asp Leu Glu Ser Leu Gly Tyr Val Leu Met Tyr Phe Asn Leu
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Gly Ser Leu Pro Trp Gln Gly Leu Lys Ala Ala Thr Lys Arg Gln Lys
 210 215 220

Tyr Glu Arg Ile Ser Glu Lys Lys Met Ser Thr Pro Ile Glu Val Leu
 225 230 235 240

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340 345 350

Ala Asn Thr Ser Pro Arg Pro Val Ser Gly Met Glu Arg Glu Arg Lys
355 360 365

Val Ser Met Arg Leu His Arg Gly Ala Pro Val Asn Ile Ser Ser Ser
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Asp Leu Thr Gly Arg Gln Asp Thr Ser Arg Met Ser Thr Ser Gln Ile
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Pro Gly Arg Val Ala Ser Ser Gly Leu Gln Ser Val Val His Arg
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Leu His Ile Glu Ser Lys Ile Tyr Lys Met Met Gln Gly Gly Val Gly
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Ile Pro Thr Ile Arg Trp Cys Gly Ala Glu Gly Asp Tyr Asn Val Met
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Ser	Arg	Lys	Phe	Ser	Leu	Lys	Thr	Val	Leu	Leu	Leu	Ala	Asp	Gln	Met		
			100					105					110				
Ile	Ser	Arg	Ile	Glu	Tyr	Ile	His	Ser	Lys	Asn	Phe	Ile	His	Arg	Asp		
		115					120					125					
Val	Lys	Pro	Asp	Asn	Phe	Leu	Met	Gly	Leu	Gly	Lys	Lys	Gly	Asn	Leu		
	130					135					140						
Val	Tyr	Ile	Ile	Asp	Phe	Gly	Leu	Ala	Lys	Lys	Tyr	Arg	Asp	Ala	Arg		
145					150					155					160		
Thr	His	Gln	His	Ile	Pro	Tyr	Arg	Glu	Asn	Lys	Asn	Leu	Thr	Gly	Thr		
				165					170					175			
Ala	Arg	Tyr	Ala	Ser	Ile	Asn	Thr	His	Leu	Gly	Ile	Glu	Gln	Ser	Arg		
			180					185					190				
Arg	Asp	Asp	Leu	Glu	Ser	Leu	Gly	Tyr	Val	Leu	Met	Tyr	Phe	Asn	Leu		
		195					200					205					
Gly	Ser	Leu	Pro	Trp	Gln	Gly	Leu	Lys	Ala	Ala	Thr	Lys	Arg	Gln	Lys		
	210					215					220						
Tyr	Glu	Arg	Ile	Ser	Glu	Lys	Lys	Met	Ser	Thr	Pro	Ile	Glu	Val	Leu		
225					230					235					240		
Cys	Lys	Gly	Tyr	Pro	Ser	Glu	Phe	Ala	Thr	Tyr	Leu	Asn	Phe	Cys	Arg		
				245					250					255			
Ser	Leu	Arg	Phe	Asp	Asp	Lys	Pro	Asp	Tyr	Ser	Tyr	Leu	Arg	Gln	Leu		
			260					265					270				
Phe	Arg	Asn	Leu	Phe	His	Arg	Gln	Gly	Phe	Ser	Tyr	Asp	Tyr	Val	Phe		
		275					280					285					
Asp	Trp	Asn	Met	Leu	Lys	Phe	Gly	Ala	Ser	Arg	Ala	Ala	Asp	Asp	Ala		
	290					295					300						
Glu	Arg	Glu	Arg	Arg	Asp	Arg	Glu	Glu	Arg	Leu	Arg	His	Ser	Arg	Asn		
305					310					315					320		
Pro	Ala	Thr	Arg	Gly	Leu	Pro	Ser	Thr	Ala	Ser	Gly	Arg	Leu	Arg	Gly		
				325					330					335			
Thr	Gln	Glu	Val	Ala	Pro	Pro	Thr	Pro	Leu	Thr	Pro	Thr	Ser	His	Thr		

Sequence Listing.ST25

340

345

350

Ala Asn Thr Ser Pro Arg Pro Val Ser Gly Met Glu Arg Glu Arg Lys
 355 360 365

Val Ser Met Arg Leu His Arg Gly Ala Pro Val Asn Ile Ser Ser Ser
 370 375 380

Asp Leu Thr Gly Arg Gln Asp Thr Ser Arg Met Ser Thr Ser Gln Asn
 385 390 395 400

Ser Ile Pro Phe Glu His His Gly Lys
 405

<210> 9
 <211> 1559
 <212> DNA
 <213> Homo sapiens

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 cgggcggctc cgcgaaatcct ccggcatccg ccccgggcgg ccgcccccg cgcgggcagc 180
 ccccgagca gtggcccggc atcggcgctt tcccgggcgg caagagttag ccatggagct 240
 acgtgtgggg aacaagtacc gcctgggacg gaagatcggg agcgggtcct tcggagatat 300
 ctacctgggt gccaacatcg cctctggtga ggaagtcgcc atcaagctgg agtgtgtgaa 360
 gacaaagcac cccagctgc acatcgagag caagttctac aagatgatgc aggggtggcgt 420
 ggggatcccg tccatcaagt ggtgcgagc tgagggcgac tacaacgtga tggcatgga 480
 gctgctgggg cctagcctcg aggacctgtt caacttctgt tcccgcaa atcagcctcaa 540
 gacggtgctg ctcttggccg accagatgat cagccgcac gagtatatcc actccaagaa 600
 cttcatccac cgggacgtca agcccgacaa cttcctcatg gggctgggga agaagggcaa 660
 cctggtctac atcatcgact tcggcctggc caagaagtac cgggacgccc gcaccacca 720
 gcacattccc taccgggaaa acaagaacct gaccggcacg gcccgctacg cttccatcaa 780
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 ctatgactac gtctttgact ggaacatgct gaaattcggt gcagcccgga atcccagga 1140
 tgtggaccgg gagcggcgag aacacgaacg cgaggagagg atggggcagc tacgggggtc 1200
 cgcgaccgga gccctgcccc ctggcccacc caggggggcc actgccaaac ggctccgcag 1260
 tgccgcccag cccgtggctt ccacgccagc ctcccgcatc cagccggctg gcaatacttc 1320

Sequence Listing.ST25

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 agcctcacag acaagtgtgc catttgacca tctcgggaag tgaggagagc cccattgga 1500
 ccagtgtttg cttagtgtct tcactgtatt ttctttaaaa aaaaaaaaaa aaaaaaaaaa 1559

<210> 10
 <211> 416
 <212> PRT
 <213> Homo sapiens

<400> 10

Met Glu Leu Arg Val Gly Asn Lys Tyr Arg Leu Gly Arg Lys Ile Gly
 1 5 10 15

Ser Gly Ser Phe Gly Asp Ile Tyr Leu Gly Ala Asn Ile Ala Ser Gly
 20 25 30

Glu Glu Val Ala Ile Lys Leu Glu Cys Val Lys Thr Lys His Pro Gln
 35 40 45

Leu His Ile Glu Ser Lys Phe Tyr Lys Met Met Gln Gly Gly Val Gly
 50 55 60

Ile Pro Ser Ile Lys Trp Cys Gly Ala Glu Gly Asp Tyr Asn Val Met
 65 70 75 80

Val Met Glu Leu Leu Gly Pro Ser Leu Glu Asp Leu Phe Asn Phe Cys
 85 90 95

Ser Arg Lys Phe Ser Leu Lys Thr Val Leu Leu Leu Ala Asp Gln Met
 100 105 110

Ile Ser Arg Ile Glu Tyr Ile His Ser Lys Asn Phe Ile His Arg Asp
 115 120 125

Val Lys Pro Asp Asn Phe Leu Met Gly Leu Gly Lys Lys Gly Asn Leu
 130 135 140

Val Tyr Ile Ile Asp Phe Gly Leu Ala Lys Lys Tyr Arg Asp Ala Arg
 145 150 155 160

Thr His Gln His Ile Pro Tyr Arg Glu Asn Lys Asn Leu Thr Gly Thr
 165 170 175

Ala Arg Tyr Ala Ser Ile Asn Thr His Leu Gly Ile Glu Gln Ser Arg
 180 185 190

Arg Asp Asp Leu Glu Ser Leu Gly Tyr Val Leu Met Tyr Phe Asn Leu
 195 200 205

Sequence Listing.ST25

Gly Ser Leu Pro Trp Gln Gly Leu Lys Ala Ala Thr Lys Arg Gln Lys
210 215 220

Tyr Glu Arg Ile Ser Glu Lys Lys Met Ser Thr Pro Ile Glu Val Leu
225 230 235 240

Cys Lys Gly Tyr Pro Ser Glu Phe Ser Thr Tyr Leu Asn Phe Cys Arg
245 250 255

Ser Leu Arg Phe Asp Asp Lys Pro Asp Tyr Ser Tyr Leu Arg Gln Leu
260 265 270

Phe Arg Asn Leu Phe His Arg Gln Gly Phe Ser Tyr Asp Tyr Val Phe
275 280 285

Asp Trp Asn Met Leu Lys Phe Gly Ala Ala Arg Asn Pro Glu Asp Val
290 295 300

Asp Arg Glu Arg Arg Glu His Glu Arg Glu Glu Arg Met Gly Gln Leu
305 310 315 320

Arg Gly Ser Ala Thr Arg Ala Leu Pro Pro Gly Pro Pro Thr Gly Ala
325 330 335

Thr Ala Asn Arg Leu Arg Ser Ala Ala Glu Pro Val Ala Ser Thr Pro
340 345 350

Ala Ser Arg Ile Gln Pro Ala Gly Asn Thr Ser Pro Arg Ala Ile Ser
355 360 365

Arg Val Asp Arg Glu Arg Lys Val Ser Met Arg Leu His Arg Gly Ala
370 375 380

Pro Ala Asn Val Ser Ser Ser Asp Leu Thr Gly Arg Gln Glu Val Ser
385 390 395 400

Arg Ile Pro Ala Ser Gln Thr Ser Val Pro Phe Asp His Leu Gly Lys
405 410 415

<210> 11
<211> 1559
<212> DNA
<213> Homo sapiens

<400> 11
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ccgagcggag cgcggcggcg gcggcggcgg cggcggctgg gccgggagag gctggcgcgc 120
cgggcggctc cgcgaatcct ccggcatccg ccccggcggg ccgccccgc ccgcggcagc 180
ccccgagca gtggcccggc atcggcgcct tcccggcggg caagagttag ccatggagct 240
acgtgtgggg aacaagtacc gcctgggacg gaagatcggg agcgggtcct tcggagatat 300

Sequence Listing.ST25

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ggggatcccg tccatcaagt ggtgcggagc tgagggcgac tacaacgtga tggatcatgga 480
gctgctgggg cctagcctcg aggacctgtt caacttctgt tcccgcaa atcagcctcaa 540
gacggtgctg ctcttggccg accagatgat cagccgcac gagtatatcc actccaagaa 600
cttcatccac cgggacgtca agcccgacaa cttctcatg gggctgggga agaagggcaa 660
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gaagtatgaa cggatcagcg agaagaagat gtcaacgccc atcgaggtcc tctgcaaagg 960
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ctatgactac gtctttgact ggaacatgct gaaattcggg gcagcccga atcccgagga 1140
tgtggaccgg gagcggcgag aacacgaacg cgaggagagg atggggcagc tacgggggtc 1200
cgcgacccga gccctgcccc ctggcccacc cacggggggc actgccaacc ggctccgcag 1260
tgccgccgag cccgtggctt ccacgccagc ctcccgcatc cagccggctg gcaatacttc 1320
tcccagagcg atctcgcggg tcgaccggga gaggaagggt agtatgaggc tgcacagggg 1380
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<210> 12
 <211> 416
 <212> PRT
 <213> Homo sapiens

<400> 12

Met Glu Leu Arg Val Gly Asn Lys Tyr Arg Leu Gly Arg Lys Ile Gly
 1 5 10 15

Ser Gly Ser Phe Gly Asp Ile Tyr Leu Gly Ala Asn Ile Thr Ser Gly
 20 25 30

Glu Glu Val Ala Ile Lys Leu Glu Cys Val Lys Thr Lys His Pro Gln
 35 40 45

Leu His Ile Glu Ser Lys Phe Tyr Lys Met Met Gln Gly Gly Val Gly
 50 55 60

Ile Pro Ser Ile Lys Trp Cys Gly Ala Glu Gly Asp Tyr Asn Val Met
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Sequence Listing.ST25

65 70 75 80
 Val Met Glu Leu Leu Gly Pro Ser Leu Glu Asp Leu Phe Asn Phe Cys
 85 90 95
 Ser Arg Lys Phe Ser Leu Lys Thr Val Leu Leu Leu Ala Asp Gln Met
 100 105 110
 Ile Ser Arg Ile Glu Tyr Ile His Ser Lys Asn Phe Ile His Arg Asp
 115 120 125
 Val Lys Pro Asp Asn Phe Leu Met Gly Leu Gly Lys Lys Gly Asn Leu
 130 135 140
 Val Tyr Ile Ile Asp Phe Gly Leu Ala Lys Lys Tyr Arg Asp Ala Arg
 145 150 155 160
 Thr His Gln His Ile Pro Tyr Arg Glu Asn Lys Asn Leu Thr Gly Thr
 165 170 175
 Ala Arg Tyr Ala Ser Ile Asn Thr His Leu Gly Ile Glu Gln Ser Arg
 180 185 190
 Arg Asp Asp Leu Glu Ser Leu Gly Tyr Val Leu Met Tyr Phe Asn Leu
 195 200 205
 Gly Ser Leu Pro Trp Gln Gly Leu Lys Ala Ala Thr Lys Arg Gln Lys
 210 215 220
 Tyr Glu Arg Ile Ser Glu Lys Lys Met Ser Thr Pro Ile Glu Val Leu
 225 230 235 240
 Cys Lys Gly Tyr Pro Ser Glu Phe Ser Thr Tyr Leu Asn Phe Cys Arg
 245 250 255
 Ser Leu Arg Phe Asp Asp Lys Pro Asp Tyr Ser Tyr Leu Arg Gln Leu
 260 265 270
 Phe Arg Asn Leu Phe His Arg Gln Gly Phe Ser Tyr Asp Tyr Val Phe
 275 280 285
 Asp Trp Asn Met Leu Lys Phe Gly Ala Ala Arg Asn Pro Glu Asp Val
 290 295 300
 Asp Arg Glu Arg Arg Glu His Glu Arg Glu Glu Arg Met Gly Gln Leu
 305 310 315 320
 Arg Gly Ser Ala Thr Arg Ala Leu Pro Pro Gly Pro Pro Thr Gly Ala
 325 330 335
 Thr Ala Asn Arg Leu Arg Ser Ala Ala Glu Pro Val Ala Ser Thr Pro

Sequence Listing.ST25

340

345

350

Ala Ser Arg Ile Gln Pro Ala Gly Asn Thr Ser Pro Arg Ala Ile Ser
355 360 365

Arg Val Asp Arg Glu Arg Lys Val Ser Met Arg Leu His Arg Gly Ala
370 375 380

Pro Ala Asn Val Ser Ser Ser Asp Leu Thr Gly Arg Gln Glu Val Ser
385 390 395 400

Arg Ile Pro Ala Ser Gln Thr Ser Val Pro Phe Asp His Leu Gly Lys
405 410 415